PR-10. DEHYDRATION OF AMIDES TO NITRILES

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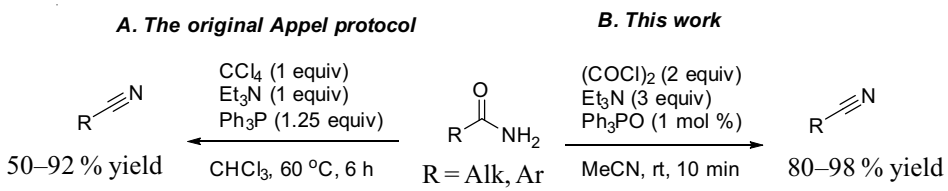
The Appel [1] reaction, which employs a combination of Ph_3P, CCl_4 and Et_3N, belongs to a group of highly versatile tools that, among other useful transformation [2, 3], can be used for the synthesis of nitriles from amides (Scheme 1, A). However, the original Appel protocol has a number of weaknesses. In this work, we present an adaptation of this protocol to a mild and facile conversion of amides to nitriles using as low as 1 mol % loading of Ph_3PO (Scheme, B) [4].

A highly expedient protocol for a catalytic Appel-type dehydration of amides to nitriles has been developed, which employs oxalyl chloride, triethylamine and triphenylphosphine oxide as a catalyst. The reactions are usually complete in less than 10 min with only 1 mol % of catalysts loading. The reaction scope includes aromatic, heteroaromatic and aliphatic amides.



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